



**MISSOURI DEPARTMENT OF TRANSPORTATION
MATERIALS ENGINEERING
Jefferson City, Missouri**

**Test Method
MoDOT T26
DETERMINATION OF CALCIUM CARBONATE
AND MAGNESIUM CARBONATE
IN LIME AND PIGMENT MATERIALS**

1.0 SCOPE.

- 1.1** This method describes a procedure for determining the percent Calcium Carbonate and percent Magnesium Carbonate in Agricultural Lime and Calcium Carbonate paint pigments.

2.0 REAGENTS AND APPARATUS.

- 2.1**
- (a) Sargent - Malmstadt Automatic Spectro-Electro titrator, Model S-29700
 - (b) Hexaver Solution
Dissolve 65 gm Hexaver (Disodium Dihydrogen 1, 2, Cyclohexanediaminetetracetate) in 2.0 liters of H₂O
 - (c) Magnesium Chloride Solution
Dissolve 8.00 gm MgCl₂·6H₂O Reagent Grade) in H₂O and dilute to 1 liter
 - (d) Calcon Indicator
Dissolve 0.30 gm Calcon in 50 ml of Methanol
 - (e) EBT Indicator
Dissolve 0.30 gm of Erichrome Black T in 50 ml of Methanol
 - (f) Potassium Hydroxide Solution
Dissolve 100 gm KOH (Reagent Grade) in 200 ml H₂O

3.0 STANDARDIZATION OF HEXAVER SOLUTION.

- 3.1**
- (a) Weigh 0.5801 gm Calcium Carbonate (Primary Standard Grade) and transfer to a 500 ml volumetric flask. Slowly add 15 ml HCL (Sp.Gr. 1.19), and boil for a few minutes to expel CO₂. Add 2 gm NH₄CL (Reagent Grade) and 200 ml H₂O. Add with a pipette 10.00 ml of the MgCl₂ solution, and make alkaline to methyl red with NH₄OH (Sp.Gr. 0.90). Cool to room temperature and dilute to volume.



